

OFFICE OF SECRETARY-LEGAL COUNSEL

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CIVIL AERONAUTICS ADMINISTRATION
MINISTRY OF COMMUNICATIONS

REPORT

ON

CIVIL AIR TRANSPORT COMPANY LIMITED

BOEING 727-92C B-1018

ACCIDENT

(with Minutes of Inquiry Board Meetings)

February 28, 1968

Distribution:

AACL : MGDR (via President)

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CATCL: CB

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for Office of Secretary-Legal Counsel

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I. Synopsis

Civil Air Transport Company Limited aircraft Boeing 727-92C B-1018 crashed and was destroyed near Linkou at 2118L, 16 February 1968.

An investigation team (consisting of Safety Chief T.K. Chao, Engineering Inspector F.S. Tseng, Taipei Safety Section's S.P. Hsieh and J.C. Han and ATC's C.K. Chao) was immediately dispatched by Civil Aeronautics Administration for investigation at crash site.

Upon receipt of report from this team, CAA called an accident inquiry board pursuant to CCAR on Accident Handling.

The first meeting of the inquiry board was held on February 21, attended by MOC Assistant K.E. Hsiao and Section Chief T.T. Hu, CAA Safety Chief T.K. Chao, Taipei Airport Manager W.J. Tien, ATC Chief W.C. Tien, Personnel Licensing Section Chief C. Yeh, Engineering Inspector F.S. Tseng, Taipei Safety Section Chief S.P. Hsieh, Acting Communications Chief T.Y. Hsieh, Weather Chief L.C. Ying, and CATCL's VPFO T.L. Boyd, VPTS A. Wueste, DFD Donald Teeters, Planning Manager K.C. Liang, Inspector C.M. Chang. Present as observers were USFAA's J. Bushnell and W. Evans, USAF ATC Adviser Ben H. Lawson. Minutes of the meeting are as attached.

The second meeting of the inquiry board was held on February 22, attended by MOC's Assistant K.E. Hsiao and Section Chief T.T. Hu, Expert K.C. Jen, CAA's Director H.Y. Lai, Safety Chief T.K. Chao, Personnel Licensing Section Chief C. Yeh, Engineering Inspector F.S. Tseng, ATC Chief W.C. Tien, ATC Assistant Chief Y.M. Liu, Facilities Chief H.W. Tien, Acting Communications Chief T.Y. Hsieh, Taipei Safety Section's S.P. Hsieh and J.C. Han, and CATCL's DFD Donald Teeters, Planning Manager K.C. Liang, VPFO T.L. Boyd and D/SAFE D.E. Dreifus. Present as observers were USFAA's J. Bushnell and W. Evans, USAF ATC Adviser Ben H. Lawson, Boeing Technical Representative W.J. Hanson, Test Pilot Don Knutson, Representative G.W. McElroy. Questioned at the meeting were pilot Hugh H. Hicks, co-pilot P.H. Wong and third crew C.P. Chang. Minutes of the meeting are as attached.

The third meeting of the inquiry board was held on February 23, attended by MOC's Assistant K.E. Hsiao and Section Chief T.T. Hu, Expert P.M. Fu, CAA's Director H.Y. Lai, Safety Chief T.K. Chao, Personnel Licensing

Section Chief C. Yeh, Engineering Inspector F.S. Tseng, ATC Chief W.C. Tien, ATC Assistant Chief Y.M. Liu, CATCL's DFD Donald Teeters, D/SAFE D.E. Dreifus and Planning Manager K.C. Liang. Present as observers were USFAA's J. Bushnell and W. Evans, USAF ATC Adviser Ben H. Lawson, Boeing Technical Representative W.J. Hanson, Test Pilot Don Knutson, Representative G.W. McElroy. Minutes of the meeting are as attached.

This report is compiled on the basis of minutes of the three inquiry board meetings forwarded by convenor Director H.Y. Lai and such data as statements by Stuart E. Dew and Hugh H. Hicks, CAT February 16 flight crew schedule (Attachment I) which shows the names of Hicks and B.K. Eng being added in pen to other typewritten names, and flight plan as filed in Hongkong (Attachment II) which shows Dew as the pilot-in-command, inconsistent with admittance by Dew and Hicks that Hicks was piloting the plane from flight takeoff till accident.

Time and place of the accident and number of casualties are as follows:

1. Place : Tea farm near Tou-Hu, Hunan Village, Linkou Hsiang, Taipei Hsien
2. Time : 2118L, 16 February 1968
3. Aircraft owner : Civil Air Transport Company Limited
4. Aircraft identity: B-1018 (Boeing 727-92C)
5. Crew : 11 (8 injured, 3 missing)
6. Passengers : 52 (34 injured, 18 killed)
7. Flight nature : Scheduled Hongkong-Taipei flight
8. Flight phase : Approach to Taipei airport
9. Accident nature : Crash and destruction by fire

The 5-man CAA team started work at crash site at 10 a.m., February 17, which included the tracing and measuring of touchdown, roll, climb, and impact with obstructions. At 1225, the plane's Flight Recorder was located among ashes. At approximately 1600, the Voice Recorder also was located. These two instruments, although burned, were in fine appearance and after having been included in a listing prepared by security agencies, were released to CAA on February 19 and placed under seal for study and reference in accident cause determination. A sketch of the crash scene has been made out as per Attachment IV. For readouts of flight recorder and glide path charts, please see attachment V.

II. Data

1. Aircraft Data

- (1) Registry number : B-1018
- (2) Make and type : Boeing 727-92C, MSN 19175
- (3) Engines : P&W JT8D-1/7
 - No. 1: P653671B
 - No. 2: P654393
 - No. 3: P653924B
- (4) Registration certificate : No. 56-238 dated 6 January 1968
- (5) Certified airworthy period : 6 January 1968 to 5 January 1969
- (6) Date of manufacture : 3 August 1966
- (7) Authorized gross takeoff weight: 161,000 lbs.

2. Cockpit Seating and Crew Data

According to flight plan filed at Hongkong, captain of the flight was Stuart E. Dew but the person actually at the controls has been determined to be Hugh H. Hicks, who was in the captain seat at front left, with P.H. Wong in the co-pilot seat at front right, whereas Dew was seated behind Hicks and C.P. Chang in flight mechanic seat behind P.H. Wong.

- (1) Stuart E. Dew, Air Asia Company Limited pilot assigned to CATCL under contract, holder of CCAA Airline Transport Pilot license (No. 10110 issued 8 July 1948) and rating and USFAA Airline Transport Pilot license (No. 202504 issued 23 June 1961). AACL had assigned Dew to Southern Air Transport for Boeing 727 training (training time: 27:11 hours), after completion of which he served as SAT's Boeing 727 captain, having logged a total of 104:24 Boeing 727 hours up till the present. CATCL purchased a Boeing 727 in January 1968 in replacement of Convair 880 for international scheduled operations and Dew was re-assigned by AACL to CATCL, having since logged 26:55 Boeing 727 hours. He was found physically fit on 11 August 1967.

- (2) P.H. Wong, AACL co-pilot assigned to CATCL under contract and holder of CCAA Airline Transport Pilot license (No. 10436)

issued 19 June 1967) and rating had been sent by AACL for Boeing 727 training with SAT (training time: 35:06 hours) after completion of which he served as SAT Boeing 727 co-pilot, having logged a total of 108:55 Boeing 727 hours. He was found physically fit on 9 February 1968.

- (3) C.P. Chang, AACL co-pilot assigned to CATCL under contract and holder of CCAA Commercial Pilot license (No. 30029 issued 24 May 1960) and rating, had been sent by AACL for Boeing 727 flying and third crew (flight mechanic) training with SAT (training time: 30:58 hours), after completion of which he served as SAT Boeing 727 co-pilot or third crew, having logged a total of 122:29 Boeing 727 hours. He was found physically fit on 6 November 1967.
- (4) Hugh H. Hicks (whose name appears in pen on the typewritten flight crew schedule), AACL pilot assigned to CATCL under contract, serving as Assistant Director of Flying Division and holder of CCAA Airline Transport Pilot License (No. 10089 issued 29 June 1961) and rating and USFAA Airline Transport Pilot license (No. 1728-40 issued 18 May 1941), had been sent by AACL for Boeing 727 training at Boeing Company in Seattle (training time: 28:25 hours), after completion of which he served as SAT's Boeing 727 captain, having logged a total of 142:13 Boeing 727 hours up till the present. CATCL purchased a Boeing 727 in January 1968 in replacement of Convair 880 for international scheduled operations and Hicks was reassigned by AACL to CATCL, having since logged 2:33 Boeing 727 hours. Since leaving SAT Hicks had not served as Boeing 727 captain for 56 days. He was found physically fit on 6 November 1967.
- (5) B.K. Eng, AACL co-pilot assigned to CATCL under contract and holder of CCAA Airline Transport Pilot license (No. 10172 issued 20 April 1960) and rating, had been sent by AACL for Boeing 727 flying and third crew (flight mechanic) training with SAT (training time: 62:52 hours), after completion of which he served as SAT Boeing 727 co-pilot or third crew, having logged a total of 156:51 Boeing 727 hours. He was found physically fit on 25 September 1967.

3. Weather Data at Time of Accident

- (1) Precipitation;
- (2) Scattered 1,000 feet, broken 2,500 feet, overcast 6,000 feet;
- (3) Visibility: 4 miles;
- (4) Wind velocity: 13 knots/100°;
- (5) Atmosphere pressure: 30.17";
- (6) Temperature: 12°C;
- (7) Dew point: 10°C.

For analysis of weather around 2100L, February 16, see attachment VI.

4. Air Traffic Control Data

The aircraft departed Hongkong for Taipei 2018L February 16, contacted Taipei Control at 2045L via 126.7 to report crossing Yellow Tail into Taipei Flight Information Region, cruising altitude 29,000 feet. At 2059L, the aircraft reported via 125.5 MC as overflying Makung VOR and was cleared to descend to 11,000 feet. At 2111L, it reported passing Hsinchu NDB (PO) at 11,000 feet, contacted Taipei Approach via 119.7 MC, and was cleared to further descend to 5,000 feet over Taoyuan NDB (GM) and 2,000 feet over outer marker (LK) for west ILS approach. Taipei weather data then prevailing were duly furnished the aircraft.

At 2118L, the plane reported approaching LK at 2,000 feet for ILS approach and was directed by Taipei Approach for contact with Taipei Tower. The pilot called Taipei Tower via 118.1 MC for landing instructions and was told to continue ILS approach, using runway 10, with wind and other data duly furnished, and to report again upon sighting approach light, which was duly acknowledged by the pilot.

Further contact attempts by Taipei Tower and Taipei Control via assorted VHF frequencies up till 2126L all failed. Realizing the seriousness, ATC immediately notified Taipei Airport Safety Section, CATCL, S&R Center. At 2150L, Taipei Control was notified by Air Combat Command by phone of the aircraft's having crashed near Linkou. ATC/B-1018 conversations as tape-recorded were as per Attachment VII.

Rescue

Upon receipt of Tower advice at 2126L, Taipei Safety Section immediately dispatched a fire engine and the six firemen on duty to rush to the crash scene. As they arrived at 2158L, injured persons were already being conveyed to hospitals in Taipei and fire engines of USAF Linkou Air Station had also arrived. The CAA fire brigade participated in the fire-fighting until powder supply was exhausted and the fire brought under control. The firemen then joined the search for bodies of perished persons and were forced by insufficient illumination, strong wind and rain to halt and resume work until after daybreak.

6. Wreckage

According to pattern of the wreckage at crash scene, the plane came to a halt at a heading of 240° , with tracks covering 546 meters in length and 60 meters in width.

The airframe disintegrated at the middle and, save a small portion, was completely burnt. The tail section came loose and was found unburned but upside down about 100 meters away. The left wing broke at root and was found, slightly burnt, alongside the fuselage, with flap down and leading edge slats in fully extended position. The right wing also came apart at root, about 15 meters away, flap and leading edge slats having become broken and scattered about. The three engines with varying degrees of outward damage, had broken loose. The main gears and nose gear all broke at struts. Positions of the remnants are noted in the sketch (Attachment IV).

7. Readouts of flight recorder, voice recorder and ATC/B-1018 conversations are as per attachments VIII, IX and VII.

8. Passenger Statements

- (1) S.F. Tsang (seat 10A): Heard "Tung-tung" sound at time of takeoff. At 2120, the hostess announced landing in 5 minutes. Did not fasten seat belt. The plane began to shake and flames were seen.

- (2) H.Y. Fung (seat 12E): Felt something abnormal at 2050 takeoff. Did not tie seat belt. Was thrown up at time of landing. Fire started. Jumped out from an opening.
- (3) K.C. Wo (seat 15E): Male, 51, native of Kiangsu, residing at 6 Lane 125 Omei Street. Felt takeoff not smooth. Crew announced arrival at 2115. Plane shook violently. Lights went off. Fuselage disintegrated at rear and flames were seen. Jumped out.
- (4) M.T. Dao (seat 16F): Native of Shanghai, architect by occupation, residing at 8 Chang An Road East (8th floor), 1st Section. Departed Hongkong 2020. Plane descended and arrival announcement made. Fastened seat belt. Plane shook violently twice or thrice upon touchdown. Saw wing on fire. Jumped out.

III. Conclusions

1. The aircraft was prior to accident within certified airworthy period. In-flight mechanical performance was normal. The aircraft was capable of being airborne following touchdown and crashed only after hitting trees and houses. The accident was thus not due to mechanical malfunction.
2. According to weather analysis, the temperature, atmospheric pressure and wind velocity in the vicinity of the crash site were such as to rule out the possibility of turbulence. The accident was thus not due to weather factors.
3. Within the two hours before and after the accident, a total of six aircraft had successfully landed on instrument at Taipei international airport. The accident was thus not due to any instrument landing system failure.
4. According to ATC voice record, the aircraft had made normal contacts with concerned ATC units at Taipei international airport and ATC instructions to the aircraft were in no error. The accident was thus not caused by failure of ATC facilities nor by any fault on the part of ATC personnel.
5. Hugh H. Hicks, who actually piloted the aircraft, handled negligently. Upon approaching outer marker LK, Hicks failed to control altitude, which was much lower than the required altitude, thus accounting for failure to intercept glide path, and further failed in timely correction after the instrument warning light flashed on at 350 feet. The landing gear touched down and rolled for approximately 200 meters. Although the plane was pulled up, it crashed after hitting trees and houses. The accident is therefore deemed to have arisen from pilot negligence.
6. According to the flight plan filed for the flight Hongkong-Taipei, Stuart E. Dew was the Captain. Hugh H. Hicks, although holding a pilot license with Boeing 727 rating, was not the captain of the flight involved, nor was he a captain on training flying. Captain Stuart E. Dew was also at fault in permitting Hugh H. Hicks to engage in captain duties.